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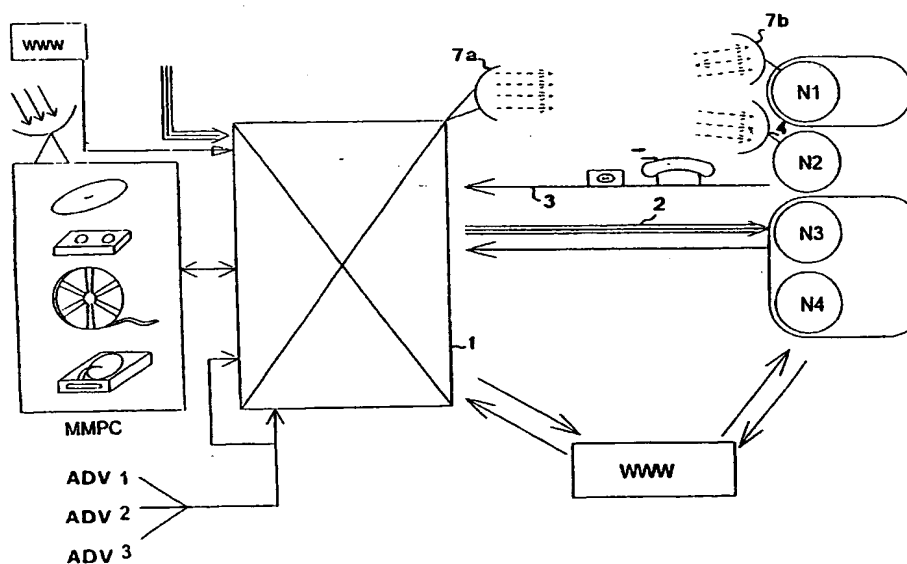
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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(54) Title: **SELECTIVE SUPPLY OF MEDIA OBJECTS BY AN OPERATOR**



(57) Abstract: In a method of selectively supplying users with media items by an operator, the user has choice options among the choice items and a user profile at least for a user group, in particular for an individual user, is produced on the basis of the user characteristics of the user in relation to the choice options. The user is then supplied with selective items which are selected to suit the user profile. The apparatus involves a data connection between user and operator, and a mixer for mixing user choice items and operator selective items. A control unit contains user profiles and controls selection of selective items, with user profile updating.

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## SELECTIVE SUPPLY OF MEDIA OBJECTS BY AN OPERATOR

## FIELD OF THE INVENTION

5           The invention concerns a method and an apparatus for the selective supply of users with media items.

          In that respect media items can be items of information in the form of image or graphics and/or sound, for example generally film sequences, but also pure acoustic information. In regard to the content thereof this may involve for example information items, enter-  
10       tainment items or advertising items.

          The term choice item is used to denote a media item that a user can choose generally from a range of such items.

          The term selective item is used herein to denote items that a supplier or provider of the service may incorporate into his supply.

15           In this respect moreover the term supply is used herein to denote any manner of transmission of the media items to a user, whether by wire, or wirelessly as by way of radio or satellite, in which case there are also a number of basically different possible options in regard to wired transmission paths, in a form a wide-band cable of a cable connection, by way of telephone line and thus also the Internet, to a power line.

20

## BACKGROUND OF THE INVENTION

          The supply or provision of media items to users can involve a fluid or multiple purpose or transition, for example insofar as entertainment items may include advertising items, irrespective of whether they are explicitly identified as advertising items or whether they are  
25       incorporated into handling of or the story or action of the entertainment item.

          In this respect the user are generally individual persons but they may also be user groups such as families, corporations and the like.

          A prerequisite in this situation is a feedback of some kind from the user to the operator or provider, which must afford the operator or provider the possibility of establishing the user  
30       characteristics and profile. The user characteristics or profile in that respect preferably involve the characteristics of the user in regard to the selection options available to him, in terms of selection of the media items.

That feedback effect can either involve automatic feedback insofar as for example in the case of wired transmission of the media items in a return channel the user characteristics or profile are signalled to the operator or registered therewith, or alternatively the user may actively send his characteristics or profile to the operator, in this case also the nature of the communication path being completely open.

The selection options on the part of the user depend on the technical options available to him at the present time.

At the present time a user has the option for example in relation to television of choosing among a number of channels. Within the channels, available to him is a previously known and fixed offering of media items, established in terms of content (title) and starting time.

## SUMMARY OF THE INVENTION

An object of the present invention is to provide a method of selective supplying users with media items by an operator, which affords an improved operating procedure and a reliable result.

Another object of the present invention is to provide an improved apparatus for selectively supplying users with media items by an operator.

These objects are solved by features of claim 1 and 19.

The foregoing and other objects are attained by the invention set forth herein.

As will be seen in greater detail hereinafter, with the above-outlined initial position, in a first step selective supply is limited to the specific targeted selection of advertising items for that user, which are presented to him between the choice items which he has selected, or which can also already be incorporated into those choice items. An example in this respect is were a corporation has rented an advertising block on a given channel for a given time/duration. However the corporation markets a number of products, for example different models of automobile. Now, depending on the respective individual user profile, the individual user, at the time of the advertising block, is presented with items of advertising information about the model of automobile from the corporation, which best suits his user profile.

In the next step it will be possible, within the running of the program on a given channel, to already select individual media items in regard to the presentation in relation to a given user of the channel.

An example in this connection is that, at a given time, for example the prime use time in the evening, one of several transmission is transmitted on the same channel at the same time to the various users, depending on their respectively profiles. The alternatives in that respect could be for example either a light entertainment program or an information program.

- 5           In this respect it will also already be possible under some circumstances for advertising items in respect of products which are selected in regard to the individual user to be incorporated into the course of the action or story of the choice item.

10           To take an example in this situation, an actor in a film, which is a choice item selected by a respective user, smokes that brand of cigarettes, which best suits the user profile of the individual user.

The ultimate state will provide that the user assembles his own program for himself, from the existing offerings in a range of choice items. The user will therefore be able at any time to request choice items or to ask for a given commencing time, so that therefore he can also ask for successions of choice items.

- 15           To give an example in this respect, a customer may personally establish for himself that he would like to view a film A from the time of 18.40, followed then by film B.

Depending on compatible modalities between user and operator, for example advertising items which are preselected for that user are incorporated by the operator within the course of the film A or the film B, or between the film A and the film B.

- 20           Incorporation of selective advertising items into the actual action or story of the film is also possible.

25           In that fashion, selective preselection in respect of choice items, tailor-made for the respective user and his user profile, will be necessary only insofar as the user is presented with selection lists in respect to his choice items, which lists are prepared according to his respective needs, in which case the choice items which best suit his user profile would respectively occur at the first location.

In addition, insofar as advertising items are also to be transmitted in this respect, for example in the form of advertising blocks, within the choice item which the user has requested, the advertising items are again selected in accordance with the user profile.

- 30           In this connection, in regard to the selective items, a choice is possible not only on the base of the contents or category of the selective item, but also on the basis of the time of presentation in relation to the user.

As an example here, on the basis of the use characteristics it is clear that the user is for example a shift worker (nightwork) and his prime use time for choice items is early in the morning. It is thus obvious that this user will also go shopping in the early hours/in the morning, with the consequence that he is presented with advertising items for consumer pre-requisites involved in everyday life, primarily in the early hours.

From a technical point of view, selective transmission, besides a bi-directional data connection between the user and the operator or provider, requires on the part of the operator in particular a central unit which includes inter alia a mixer, by means of which the choice items selected by the user are combined with the selective items which are generally predetermined by the operator, generally in the form of a time succession.

Preferably in this respect the central unit also includes a database for the user profiles and an evaluation unit which evaluates the data relating to the user characteristic and simultaneously or in time-displaced relationship implements updating of the user profiles on the basis of such evaluation results.

With the technical procedures available nowadays, the mixer will therefore have at least two inputs, more specifically for the choice items, for example a program which is in the finally assembled condition on a channel of a television transmitter, but without incorporation of advertising blocks, and on the other hand for selective items, for example advertising clips for advertising blocks. An input can also be a connection to the Internet from which the choice items and/or the selective items can originate.

With the above-described technical ultimate state, an MMPC (Multi-Media Playout Center), that is to say a kind of automatically accessible media item archive, will be a constituent part of the central unit or will be bidirectionally connected thereto.

In order to be able to make the correct selection for the respective user, the nature of the configuration of the user profiles is of essential significance.

It will be appreciated that it would be possible to describe each individual user in terms of given areas of life, for example the so-called environmental or social components such as aims in life, social position, work/achievement/material power, view of society, family, partnership, leisure time, ideals and models, and lifestyle.

Politics and the advertising industry in contrast are primarily interested in dividing users into a finite number of categories, either overall or considered on the basis of individual environmental and social components as already referred to above. In this respect for example

a known manner of dividing users is in accordance with the sine environment, from which the above-mentioned environmental and social components originate.

The categories which are defined in that way and in which an individual user can be classified in respect for example of the individual environmental and social components involved (only one single category per component) form the framework for the user profile.

At the same time it is also necessary for the available choice items to be arranged in categories. In that respect, these choice categories should preferably be identical to the user categories, irrespective of whether the user categories involve the entire user or the individual environmental and social components of the user.

Equally, the available selective items must be associated with categories in the same manner as the choice items.

In order to also take account of the variation in the individual user which can be connected not only to life development generally, for example changes in partnership, job or profession, or family, but also relatively short-term factors such as kinds of sport which change with the seasons of the year and so forth, the user profile is preferably continuously updated.

For that purpose it is necessary for the user characteristic to be recorded or registered in the form of the perception of the choice options, in regard to the choice items for supply to that user, to evaluate same and to draw therefrom conclusions relating to the user profile. In that respect, consideration is given not only to the choice items which the user selects for himself, but also how those choice items are consumed:

- whether the choice item is received in its entirety, that is to say from beginning to end, and in particular whether the advertising blocks contained therein were also received;
- whether the receiver was deliberately switched on only just before the beginning of the choice item or, if the receiver was already operating, whether it was changed over or switched over to the corresponding channel for the selection item, at least only just before the beginning of the choice item;
- whether the receiver was switched into a different condition during reception of the choice item and if so, with what frequency and for what period of time and in particular also precisely during the period of the advertising blocks, and in particular whether in that case the receiver was changed over to other channels or whether the receiver was completely switched off; and

- whether and when before the end of the choice item the user definitively left the channel of the choice item, which leads to the conclusion that the user was dissatisfied with the choice item.

The above-described results can be weighted relative to each other by evaluation procedures.

In order to exclude excessively short-term changes in user characteristics, which for example are to be attributed to a modified form of day on the part of the user, short-term psychological changes on the part of the user and so forth, and which should not influence selective supply, adaptation and updating of the user profile is implemented in particular specifically and deliberately with a time displacement, that is to say with a delay.

That can be effected either by incorporation of the detected user characteristics in the form of updating of the user profile taking place only a defined period of time after detection of the change in characteristics which has occurred, or by a procedure whereby individual uses (individual selection of choice items) are not evaluated, but rather the selection characteristics are analysed overall only ever within fixed periods of time.

Further objects, features and advantages of the invention will be apparent from the description hereinafter of a preferred embodiment of the method and apparatus.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a view illustrating the principle of selective supply, and Figure 2 shows the logical links in selective supply.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Figure 1 showing a view in principle of the procedure involved, shown therein are different possible forms of communication between a central unit 1 to which the operator or provider has access, and the users N.

Those connections have to be bidirectional in nature, with a capacity which is generally markedly greater in the forward direction to the user N for the transmission of film sequences etc which run smoothly and without jerking, while the rearward direction requires only very low levels of capacity for the transmission of those signals which are contained in

the Data, ascertained at the user, in regard to the choice characteristics and the accompanying circumstances in terms of consumption.

The data connection in the rearward direction does not have to occur by way of the same connection element or the same mode of connection as in the forward direction.

5        User N1 receives the signals from the central unit to an antenna 7b at the user. In that respect the antenna 7b operates simultaneously as a transmitter for the transmission of signals in the rearward direction.

10        In this respect, the user N1 is not considered alone, as the connection of the user N1, that is to say the receiver thereof, but at least the data detection unit at the receiver, is used by an entire user group NG1.

User N2 receives the media items also by way of a radio connection 4, whereas signal transmission in the rearward direction from the user N2 to the central unit is effected by way of a telephone line 3 or a power line.

15        In contrast, between the user N3 and the central unit 1 there is a connection by way of a wide-band cable 2 which is of a directly bidirectional nature so as to ensure data transmission in both directions, more specifically with adequate capacity in each case.

User N4 is also bidirectionally connected to the central unit 1 but not directly but indirectly, by wire or also wirelessly, by way of the Internet as indicated at www.

20        The central unit 1 on the one hand ensures transmission of the correct media items to the users, and for that purpose has a plurality of inputs.

In the case of conventional technology, that is to say with a fixed program within a channel, those program channels are fed in at an input of the central unit 1 in a finished processed condition but for example with the exception of the advertising clips.

25        In contrast the advertising clips are fed in at another input. Correct time co-ordination is effected by the mixer 8 which is a component part of the central unit 1.

30        In the future, the central unit is increasingly fed additionally or instead by finished processed channel program from a Multi-Media Player Center MMPC in which the individual media items are present on different data carriers, for example CD, DVD, video cassette, roll of film, hard disk and the like. Satellite reception or another wireless reception source for items which are currently being played is generally also present.

The databases in which are stored on the one hand the user profiles and on the other hand the item profiles are preferably also a component part of the central unit 1. The same applies for the evaluation unit 9 which converts the data arriving from the users, relating to



user characteristics, in relation to the media items, into correction values for the individual user profiles.

Figure 2 shows the logical interconnection of the individual components thereof at the user end.

5 The user receives his media items presented by the central unit 1. The characteristics of the user N in relation to those media are registered by the evaluation unit 9. The modes of behaviour or changes in behavioural characteristics, which are detected in that situation, are converted by the evaluation unit 9 into correction values in respect of the stored profile PN of the user.

10 The user profile PN which is stored at the current time controls in the central unit 1 the mixer 8 which mixes the individual items, namely choice items and selective items, and feeds them to the user N.

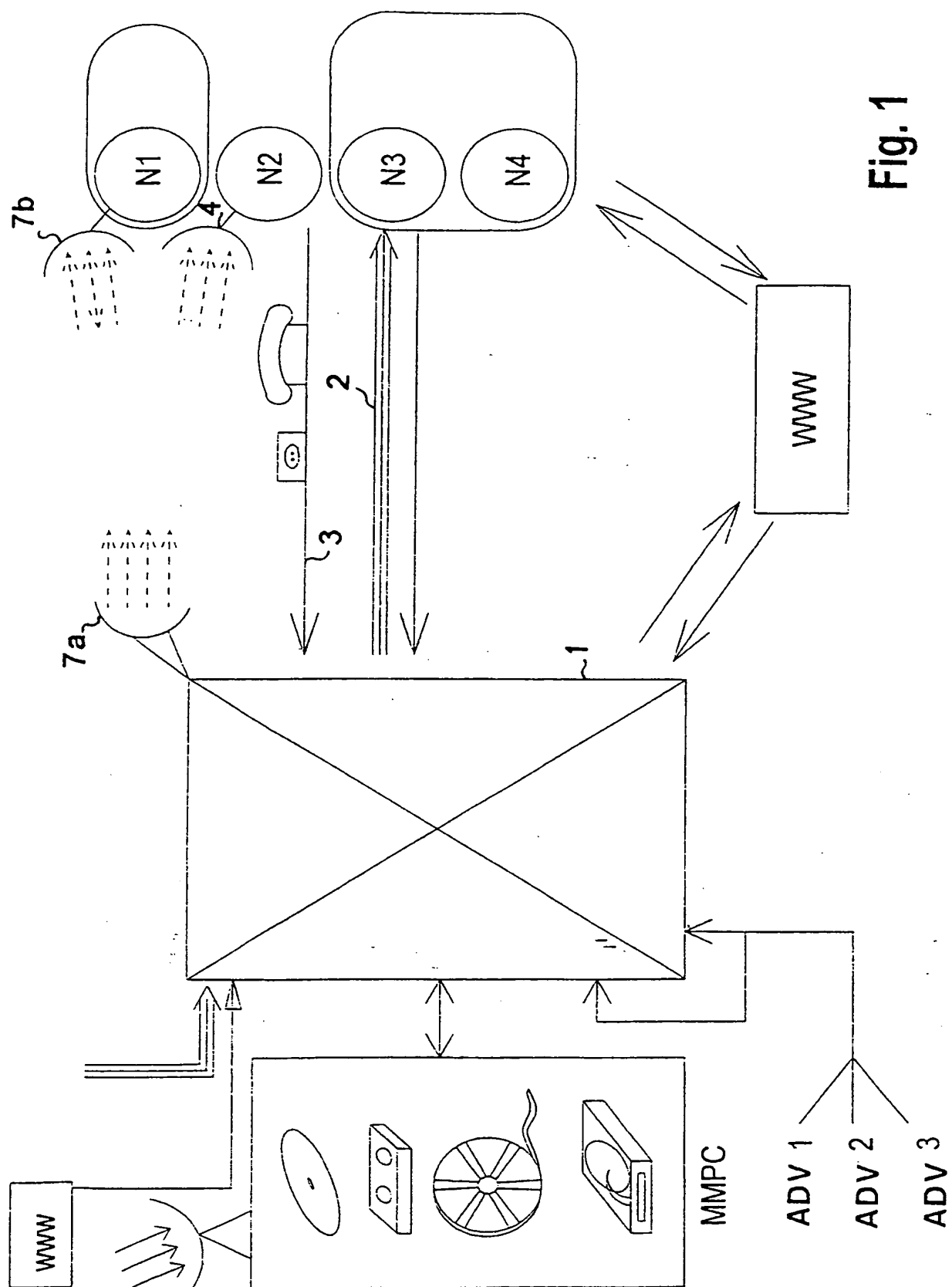
Also available to the evaluation unit 9, for evaluation purposes, are the profiles PB of those items, the consumption or non-consumption of which by the user N was detected.

15 As, at the beginning of activity of the central unit, there is no profile PN in respect of the individual user, then as an auxiliary matter firstly the profile PA of an entire range in which the user occurs, regionally or on the basis of other points of view, is used as a substitute. When an individual user profile PN has been produced by virtue of the detected user behaviour or characteristics of the individual user N, that individual user profile can be continuously refined and updated.

20 In that respect, as a corollary, the profile PN which is available for each individual user and continuously updated can even serve to refine and continuously update the range profile PA which was initially used, so-to-speak as residuary or waste product from selective transmission.

25

16. A method as set forth in claim 15, wherein the choice categories are identical to the user categories.
17. A method as set forth in one of the preceding claims, wherein area profiles which describe the users and which in particular statistically describe the users, in particular being statistically descriptive in accordance with their sociological data, are used as initial user profiles.
18. A method as set forth in one of the preceding claims, wherein the user profile is for an individual user.
19. Apparatus for selectively supplying users with media by an operator, comprising a bidirectional data connection between a user and the operator, a mixer at the operator for bringing together choice items which the user selects and selective items which the operator selects for the user, a sensor and transmitter unit at the user adapted to detect the user characteristics in respect of the media items received by the user, an evaluation unit at the operator to which the user characteristics are communicated for evaluation thereof, and a control unit at the operator adapted to contain the user profile of the respective user and to control the selection of the selective items for said user and to update the user profile on the basis of data available from the evaluation unit.
20. Apparatus as set forth in claim 19, wherein the choice items are made available from Multi-Media Playout Center (MMPC) which permits access at any time and in any desired Sequence of the choice items stored therein by the user.



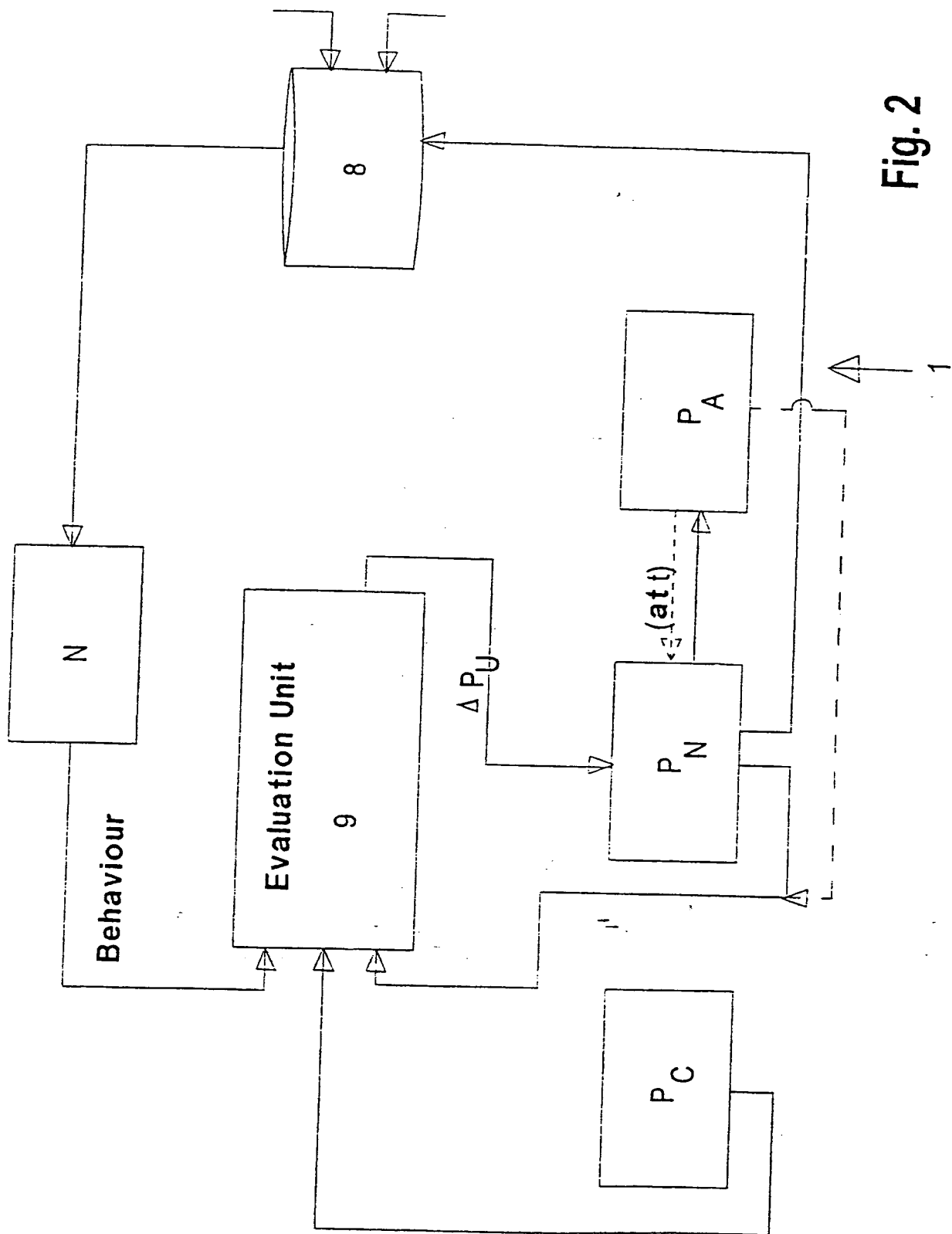


Fig. 2

# INTERNATIONAL SEARCH REPORT

Intern al Application No

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**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 H04N7/16

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 967 804 A (SARNOFF CORP) 29 December 1999 (1999-12-29)	1,2,4,9, 13,17-19
Y	paragraph '0017! - paragraph '0018! paragraph '0043! paragraph '0070!	8,20
X	WO 98 28906 A (PRINCETON VIDEO IMAGE INC ;ROSSER ROY (US)) 2 July 1998 (1998-07-02) page 10, line 32 -page 12, line 14 page 13, line 1 - line 16 page 16, line 26 - line 27 page 18, line 35 - line 37 page 20, line 4 - line 6	1,2,4, 9-13,15

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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# INTERNATIONAL SEARCH REPORT

International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 006 257 A (SLEZAK ROBERT J) 21 December 1999 (1999-12-21)	1,2,6,9, 11
Y	column 3, line 45 -column 4, line 19 column 5, line 11 - line 54 column 8, line 18 - line 42 column 10, line 14 - line 17 ---	8,20
A	US 6 002 393 A (BEAUREGARD ROBERT G ET AL) 14 December 1999 (1999-12-14) figure 2A column 3, line 9 - line 16 column 3, line 60 -column 4, line 3 column 7, line 20 - line 36 column 8, line 3 - line 26 -----	1,19

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 00/10387

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0967804	A	29-12-1999	NONE	
WO 9828906	A	02-07-1998	EP 0947096 A	06-10-1999
US 6006257	A	21-12-1999	AU 7246996 A	17-04-1997
			EP 0852880 A	15-07-1998
			JP 11512903 T	02-11-1999
			WO 9712486 A	03-04-1997
US 6002393	A	14-12-1999	NONE	

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